NEDS

NATIONAL EVALUATION DATA SERVICES

A PROFILE OF CLIENTS ENTERING TREATMENT FOR ALCOHOL PROBLEMS

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CSAT
Center for Substance Abuse Treatment
SAMHSA

TABLE OF CONTENTS

FOREWORD

The Center for Substance Abuse Treatment (CSAT) works to improve the lives of those affected by alcohol and other substance abuse, and, through treatment, to reduce the ill effects of substance abuse on individuals, families, communities, and society at large. Thus, one important mission of CSAT is to expand the knowledge about and the availability of effective substance abuse treatment and recovery services. To aid in accomplishing that mission, CSAT has invested and continues to invest significant resources in the development and acquisition of high quality data about substance abuse treatment services, clients, and outcomes. Sound scientific analysis of this data provides evidence upon which to base answers to questions about what kinds of treatment are most effective for what groups of clients, and about which treatment approaches are cost-effective methods for curbing addiction and addiction-related behaviors.

In support of these efforts, the Program Evaluation Branch (PEB) of CSAT established the National Evaluation Data Services (NEDS) contract to provide a wide array of data management and scientific support services across various programmatic and evaluation activities and to mine existing data whose potential has not been fully explored. Essentially, NEDS is a pioneering effort for CSAT in that the Center previously had no mechanism established to pull together databases for broad analytic purposes or to house databases produced under a wide array of activities. One of the specific objectives of the NEDS project is to provide CSAT with a flexible analytic capability to use existing data to address policy-relevant questions about substance abuse treatment. This report has been produced in pursuit of that objective.

This analytic report highlights the results of a secondary analysis of data collected in the NTIES. The analysis addresses the problems experienced by individuals who entered treatment for alcohol problems (whether or not they also entered treatment for other drug use), how their needs differed from those who entered treatment for drugs other than alcohol, the degree to which their needs were met, and the effectiveness of the treatment they received.

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This report was developed by the National Evaluation Data Services project under CSAT's direction.

Questions about this report should be directed to the NEDS manager at (703) 385-3200.

EXECUTIVE SUMMARY

Large numbers of clients entering publicly funded substance abuse treatment facilities cite problems with alcohol as one reason for seeking treatment. This report presents the results of a secondary analysis of the National Treatment Improvement Evaluation Study (NTIES) data set. We profile the treatment experiences of three study groups that were subsets of the total client sample (N=4,411): clients who entered treatment for alcohol only (n=464), for *alcohol plus other drugs* (n=1,523), and for *other drugs only* (n=2,424). Clients using *alcohol only* tended to be older, more often white, somewhat more educated, and more likely to be employed prior to entering treatment. The majority of *alcohol only* clients were treated primarily in outpatient settings (61%), whereas clients having problems with *other drugs only* were treated in a wider range of settings: outpatient (29%), methadone [outpatient] (17%), long-term residential (18%), and short-term residential (20%).

Alcohol plus other drugs clients significantly reduced their consumption of drugs following treatment, whereas *alcohol* only clients (who were by definition drug-free in the 12 months prior to treatment) showed minor, but statistically significant post-treatment increases in marijuana (1 0%), cocaine (3%), and crack (3%) use. With the exception of DUI/DWI offenses, *alcohol only* clients had fewer criminal behaviors and arrests prior to treatment, yet they were more often referred to treatment by the criminal justice system (presumably for DUIs) and were less frequently self-referred. Nevertheless, all study groups demonstrated substantial reductions in criminal behaviors across the follow-up periods. Employment, general health, and mental health outcomes also showed improvement for all study groups. No significant post-treatment reductions in the self-reported use of any alcohol were observed across the three groups-a finding that may be of clinical concern for the *alcohol only* treatment group. Findings are discussed as they relate to future data analysis and policy recommendations.

I. INTRODUCTION

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The National Institutes of Health recently reported that the annual direct and indirect costs of alcohol abuse in the United States total $148 billion (NIH, 1998). Most of these costs are related to lost productivity due to alcohol-related illness or early death. Over 100,000 premature deaths per year have been attributed directly to alcohol abuse (McGinnis & Foege, 1993). These substantial economic, societal, and human costs of alcohol abuse justify additional research and analysis efforts aimed at discovering how alcohol problems can be treated most effectively.

This report presents the results of a secondary analysis of data from the National Treatment Improvement Evaluation Study (NTIES). Our objective is to describe how and to what degree individuals with alcohol problems differed from other clients in the NTIES study for a specific treatment episode (intake through treatment exit and follow-up). The next section provides the background and rationale for our analysis. The prevalence of alcohol abuse disorders among various treatment populations is also briefly discussed.

1. BACKGROUND

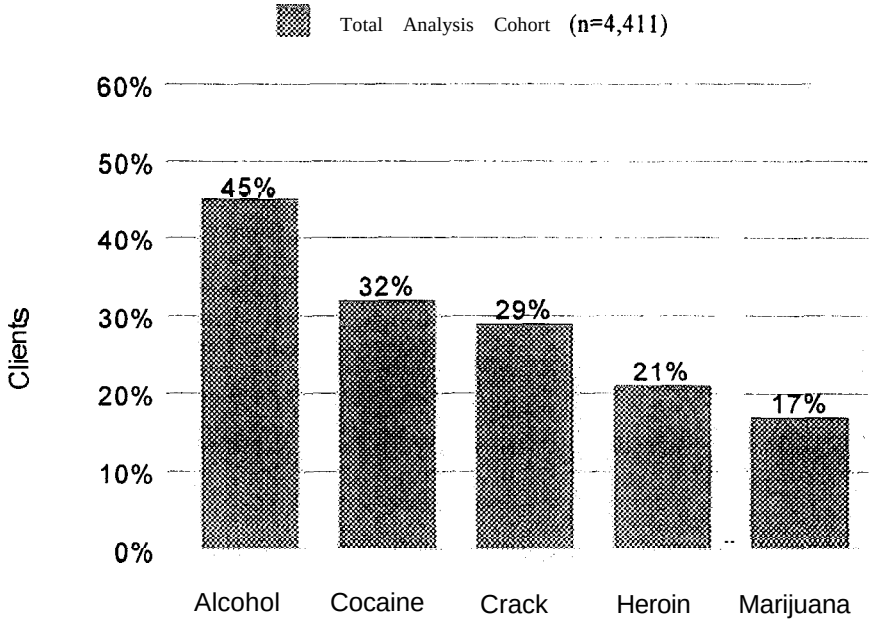
A large percentage of clients entering publicly funded substance abuse treatment do so for alcohol problems. Data from the Treatment Episode Data Set (TEDS), an administrative data system drawn from the universe of publicly funded substance abuse treatment centers, indicate that 52 percent of all 1995 admissions listed alcohol as the primary drug of abuse, and another 22 percent listed alcohol as a secondary drug of abuse. In addition, alcohol was the most frequently cited substance of abuse at client intake in NTIES. It is important, therefore, to have an accurate profile of individuals experiencing alcohol problems in order to understand this major segment of the treatment population.

A substantial proportion of all NTIES clients-45 percent-identified alcohol problems as one of the factors leading them to seek treatment (see Exhibit I-l). The next most frequently cited substances used by clients seeking treatment were cocaine (32%) and crack (29%). Heroin (21%) and marijuana (17%) abuse were also frequently recorded at intake.

An accurate profile of persons experiencing alcohol problems within the public treatment system, their motivations for seeking treatment, the specific treatment modalities they access, and the outcomes associated with their treatment may help to inform the development of optimal treatment practices.

Findings from these analyses also may be informative to CSAT decision makers in determining priorities for conducting evaluations for specific substance-abusing populations.

EXHIBIT I-1
FREQUENCY **OF** SUBSTANCES CITED AS PROBLEMS BY CLIENTS AT TREATMENT **INTAKE**



1.1 Overview of the National Treatment Improvement Evaluation Study (NTIES)

NTIES was a congressionally mandated study of the effectiveness of substance abuse treatment services supported by CSAT. The NTIES project collected longitudinal data from purposive samples of substance abuse treatment clients drawn from treatment programs or service delivery units (SDUs) that were receiving demonstration grant funding from CSAT.[1] Brief descriptions of the three CSAT demonstrations evaluated under the NTIES contract are provided in an Appendix to this report. The appendix also shows the exact distribution of the NTIES sample across these programs.

[1] An SDU is defined by CSAT as a single site offering a single treatment modality.

Conducted from 1993 through 1995, NTIES built upon earlier national, multisite treatment evaluation studies including the Drug Abuse Reporting Program (DARP: 1969-1973), the Treatment Outcome Prospective Study (TOPS: 1979-l 98 1), the Drug Services Research Study (DSRS: 1989-l 990) and the Drug Abuse Treatment Outcome Study (DATOS: 1991-1993).

1.2 Importance of NTIES Data

NTIES data remain an important resource for information on substance abuse treatment effectiveness. Although most large, multisite -investigations have concluded broadly that substance abuse treatment is effective, significant core issues relating to how drug treatment can be made *more* effective remain to be addressed (Hubbard, 1997; Institute of Medicine, 1990). The most effective combinations of treatment services for specific substance-abusing populations have not been definitively identified (Hubbard, 1997), and the complex interactions of clients, clinicians, and SDUs in determining treatment outcomes are not well understood. NTIES data represent some of the most recent and meticulously defined data on comprehensive client services and outcomes for SDUs participating in CSAT's 1990-l 992 demonstration grants. For these reasons, the NTIES data set will continue to be an essential resource for exploring client (subpopulation) differences and treatment variation in the nation's public substance abuse treatment system.

2. METHODS

This section describes the methods used to classify clients into analytic study groups, and the manner in which cohorts of clients were identified based on information supplied at the time of intake into treatment. We also describe the analytic methods used to evaluate the statistical significance of between-groups or pre- to post-treatment differences.

The present analyses focus on subsets of the 4,4 11 NTIES clients for whom both pre-treatment intake and post-treatment follow-up data are available, along with either a completed discharge questionnaire or a patient record abstraction form. We profile the treatment experiences of the following three study groups that form discrete subsets of the total NTIES client sample:

- Clients who entered treatment for ***alcohol only*** (n = 464)
- Clients who entered treatment for *alcohol plus* ***other drugs*** (n = 1,523)

- Clients who entered treatment for *other drugs only* (n = 2,424).

Study groups were defined on the basis of client responses to the following two questions from the NTIES Research Intake Questionnaire (NRIQ):

- What is the drug or drug combination that made you come to treatment this time?
- Have you abused [specific] drugs 5 or more times during the past 12 months?

The post-hoc assignment of clients to study groups was based on the specific, problem drug(s) mentioned by clients during treatment intake (Question 1, above). Clients comprising the *other drugs only* study group did not name alcohol in Question 1. Clients who named alcohol in Question 1 (n=1,987), were further classified through either a negative history (i.e., alcohol only) or a positive history (i.e., alcohol plus other drugs) of other drug use in the 12 months prior to treatment (Question 2, above).

2.1 Alcohol Only Study Group

Among the 1,987 clients who reported alcohol as one of their problem drugs (Question 1), only 464 (or 11 % of the total NTIES sample) reported having used no other drugs (5 or more times) in addition to alcohol during the 12 months prior to treatment. We label this subset of clients as the *alcohol only* study group (while acknowledging that this or any post-hoc method for categorizing alcohol users will potentially mis-classify some small number of clients).[2]

2.2 Alcohol Plus Other Drugs Study Group

Among the clients who reported alcohol as one of the reasons for entering treatment, over 75 percent (n = 1,523) reported using one or more drugs in addition to alcohol during the 12 months preceding treatment. In this paper, we refer to this group as the *alcohol plus other drugs* study group. This study group represents a little over one-third (34%) of the total NTIES client sample.

[2] Another method for defining the *alcohol only* group would have involved selecting clients mentioning no substances other than alcohol on the first screening question (i.e., what is the drug or drug combination that made you come to treatment this time?). However, the data suggest that many of these clients, as revealed by subsequent probes, had poly-substance use disorders and that their substance abuse careers had "cycled through" multiple, distinct drug preference categories.

2.3 Other Drugs Only Study Group

NTIES clients who reported entering treatment for drugs other than alcohol (n = 2,424) represent the third study group for this analysis. These clients were placed in the *other drugs only* study group because they did not cite alcohol as one of their current reasons for entering treatment. This study group represents about 55 percent of the NTIES outcomes analysis sample.

2.4 Assessing the Validity of Study Groups

A preliminary analysis of the NTIES sample was conducted to confirm the validity of the study groups' construct. These analyses showed that clients in each of the three study groups differed primarily by their preferred substance(s) of abuse, and not by the confounding effects of either specific CSAT demonstration program enrollment (i.e., Target Cities, Critical Populations, or Criminal Justice) or individual client SDU placements.

Next, the construct validity of the study groups was explored by looking at the alcohol use and drug use severity scale scores for these groups of clients. These severity indices were calculated at the time of client intake and follow-up (CSAT, 1997) and represent the aggregate mean of three or more transformed items from the client interview questionnaires. Severity ratings for a given client can range from 0 to 100.

The three study groups were equally distributed across each of the CSAT demonstration programs, with the majority (59%) of all NTIES clients being sampled from *Target Cities* programs. Similarly, there was virtually complete overlap in the SDUs that treated each of the three study groups. Of the 44 SDUs identified as treating *alcohol only* clients, 43 or 98 percent also treated substantial numbers of *alcohol plus other drugs* and *other drugs only* clients. A total of 462 *alcohol only* clients (over 99%) were treated in these "shared" treatment settings.

An examination of Exhibits I-2 and I-3 shows that the *alcohol only* and the *other drugs only* study groups were distinct in their respective levels of impairment from alcohol and other drugs. As shown in Exhibit I-2, the *other drugs only* group was markedly less impaired by alcohol use than either the *alcohol only* or the *alcohol plus other drugs* group. Conversely, Exhibit I-3 illustrates that the *alcohol only* group was markedly less impaired by other drug use than either the *other drugs only* or the *alcohol plus other drugs* group.

EXHIBIT 1-2
ALCOHOL USE SEVERITY SCORES
AT ADMISSION AND FOLLOW-UP

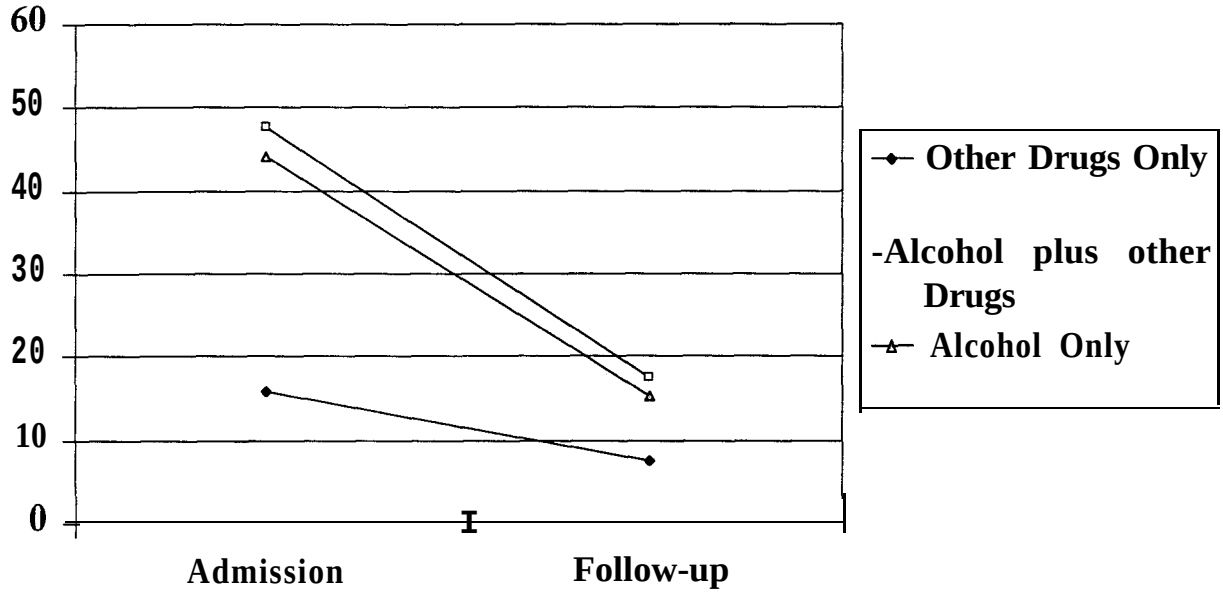
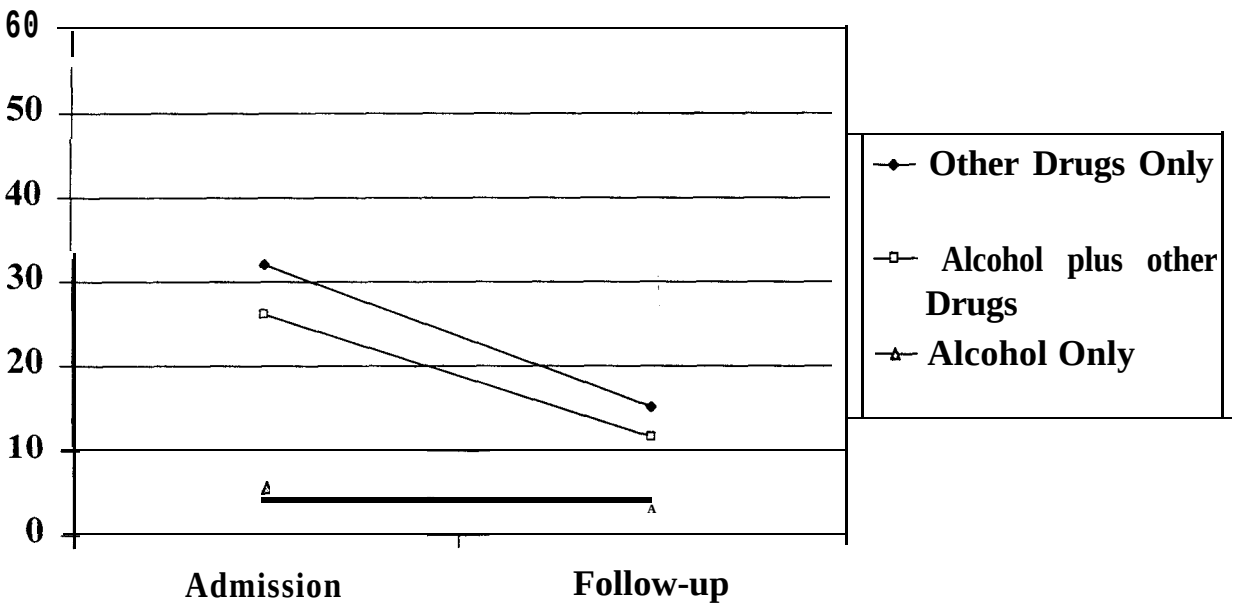


EXHIBIT I-3
DRUG USE SEVERITY SCORES
AT ADMISSION AND FOLLOW-UP



2.5 Analysis Overview

Statistical procedures were used to assess two patterns of findings within the client data. First, we tested the relationship between study group membership and a number of selected factors, including: client characteristics, demographics, reasons for entering treatment, and the treatment services received. We identified the client factors that were systematically related to patterns of treatment. Typically, a two-way test of proportions was performed between the *alcohol only* and the *other drugs only* study groups.

Based on the earlier analyses of the alcohol and drug use severity scales, these two groups were believed to be more (internally) homogeneous with regard to alcohol or drug preferences per se, and therefore show the greatest contrast on selected client and treatment factors. Second, we used a number of statistical procedures to evaluate the impact of treatment by measuring pre- to post-treatment changes in the frequency of specific, self-reported behaviors for groups of clients. The outcomes assessed included: drug and alcohol use, criminal behaviors, physical and mental health, and employment.

The results presented in this paper are an initial attempt to characterize or profile these three study groups. Causal relationships should not be inferred from the observed associations between any two (or more) of the variables examined. Statistical tests for group differences in client characteristics, services received, and client outcomes were performed using nonparametric statistical procedures. Chi-square tests were used to assess the independence of study groups on selected categorical measures (e.g., gender, age) related to pre-treatment characteristics and treatment events. Probabilities (p-values) are provided throughout the text and tables. The p-values are the probability of an *incorrect rejection* of the null hypothesis (i.e., no relationship) given the obtained Chi-square value.

Selected client-level outcomes (e.g., past 12 months drug use) were examined using logistic regression (LR) to assess the effects of treatment (pre- to post-treatment change), study group membership (e.g., *alcohol only* versus *other drugs only)* and the interaction of these two factors. Odds ratios were calculated based on LR analyses that controlled for the effects of age, gender, race, and ethnicity on client outcomes. Within study groups, chi-square tests were used to determine the significance of paired (pre- versus post-treatment) proportions.

3. ORGANIZATION OF THE REPORT

The findings of this report are organized into three major sections that correspond roughly with the chronology of an individual treatment episode:

- Client profiles (e.g., pre-treatment assessment)
- Treatment experiences (e.g., client placement into treatment modality, therapeutic goals, treatment discharge status)
- Treatment outcomes (e.g., post-treatment maintenance of therapeutic gains).

We conclude the paper with a summary of the major findings and their possible implications for evaluating the effectiveness of substance abuse treatment for specific populations. We also discuss the implications of these findings for future analytic work and address their potential impact on policy-relevant decisions regarding the future allocation of treatment and evaluation resources.

II. CLIENT PROFILES

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In this section we address the basic questions of who entered treatment and why. We examine differences among the study groups in terms of clients' demographic/social characteristics, their reasons for entering (or being referred to) treatment, and their prior treatment experiences. Our primary focus in this section is to distinguish clients seeking treatment primarily for alcohol problems *(alcohol only)* from the *other drugs only* study group. Data for the *alcohol plus other drugs* study group are depicted within each of the exhibits in order to provide a more comprehensive description of the findings.

1. CLIENT CHARACTERISTICS

To accurately profile the NTIES study groups at the time of treatment intake, we examined a number of client demographic and social characteristics. Characteristics included gender, age, race/ethnicity, employment/incarceration status, and living situations. As indicated in Exhibit II- 1, clients entering treatment primarily for alcohol *(alcohol only* group):

- Included more males (77%) than the *other drugs only* group (66%): $p < .001$
- Included more white (37%versus 25%) and fewer black clients (37% versus 58%) than the *other drugs only* group: p's $< .001$
- Included more clients over the age of 45 than the *other drugs only* group (24% versus 6%, $p < .001$)
- Were almost twice as likely to be currently employed *(29%* versus *15%)* as the *other drugs only* group: $p < .001$
- Were less likely to be unable to work because of drug use (5% versus 2 1 %) compared to the *other drugs only* group: $p < .001$.

There was a marginally significant trend for alcohol only clients to more often have attained a high school diploma or GED (60% versus 55%, $p = .06$).

The demographic characteristics of the *alcohol only* study group are consistent with observed correlates of alcohol abuse as described by the National Longitudinal Alcohol Epidemiologic Survey (NLAES: Grant, 1997). The NLAES showed that younger cohorts of individuals were more likely to use drugs in addition to alcohol, and that men were more likely to use alcohol only compared to females. Gender differences were most apparent within. the oldest cohort (i.e., persons aged 55 or older), in which the prevalence of alcohol dependence

EXHIBIT II-1
PROFILES OF NTIES CLIENTS AT INTAKE

CLIENT CHARACTERISTIC	Alcohol Only n=464		Alcohol and Other Drugs n=1,523		Other Drugs Only n=2,424	
	n	%	n	%	n	%
Sex						
Male	357	77%	1,091	72%	1,589	66%
Female	107	24%	432	28%	835	34%
Race/ethnicity						
Hispanic	83	18%	207	14%	368	15%
Black (non-Hispanic)	170	37%	886	58%	1,394	58%
White (non-Hispanic)	171	37%	373	24%	604	25%
Other (non-Hispanic)	40	9%	57	4%	58	2%
Education: HS diploma or GED	279	60%	794	52%	1,342	55%
Age						
less than 21 years	33	7%	193	13%	256	11%
21 to 34	167	36%	778	51%	1,285	53%
35 to 44	152	33%	451	30%	731	30%
45 years or older	112	24%	101	7%	152	6%
Employment/incarceration status						
Currently employed	135	29%	246	16%	375	15%
In jail/prison	75	16%	244	16%	390	16%
Unable to work-drug use	23	5%	291	19%	521	21%
Unable to work-injury/disability	34	6%	86	6%	149	6%
Other/not ascertained	197	42%	656	43%	989	41%
Living situation in past 12 months						
Lives in own/parents' house/apt	383	83%	1,209	79%	1,941	80%
Currently married	117	25%	279	18%	514	21%
Lives with spouse or partner	216	47%	766	50%	1,251	52%
Lives with alcoholic	36	8%	160	11%	182	8%
Lives with drug user	10	2%	140	9%	227	9%
Lives with person who helps support client financially	221	48%	910	60%	1,445	60%
Lives alone	33	7%	86	6%	89	4%

increased twofold for males. In addition, the NLAES found that whites were more likely than blacks (but not Hispanics) to develop alcohol dependence.

On most indicators of clients' living situation prior to treatment, all three groups were quite similar. Clients in the *alcohol only* group were just as likely as those in the *other drugs only* group to live with an alcohol abuser, but they were less likely to live with a drug abuser (2% versus 9%, $p < .OO\ 1$). The *alcohol only* clients also were less likely to live with another person who provided financial support (48% versus 60%, $p < .001$). No differences were observed in the percentages of clients in each group who were currently in jail or prison.

2. CLIENT REASONS FOR SEEKING TREATMENT

Clients were asked at the time of treatment intake for their "most important reasons for coming to treatment." Client responses were recorded verbatim and subsequently coded into one of 10 categories (see Exhibit 11-2). Compared with individuals in treatment for drugs other than alcohol, those in treatment primarily for alcohol:

- More often entered treatment because of criminal justice pressures (17% versus 7%: $p < .001$) compared to the *other drugs only* group
- Less often entered treatment for personal motives (e.g., disgusted with current way of life-55% versus 71%: $p < .001$) than the *other drugs only* group
- More often entered treatment for physical health reasons (7% versus 2%, $p < .OO\ 1$) compared to the *other drugs only* group.

Clients were also asked at intake to identify the person or agent who was "important in getting you to come to treatment." These treatment "referral" sources were also recorded verbatim and subsequently coded into the categories shown in Exhibit II-Z. Compared with individuals in treatment for drugs other than alcohol, those in treatment primarily for alcohol problems:

- Were less often self-referred to treatment (3 1% versus 38%, $p < .001$) than the *other drugs only* group
- More often were referred to treatment by the criminal justice system (32% versus 20%, $p < .001$) compared to the *other drugs only* group
- Had more medical and/or psychiatric referrals to treatment (2% versus 0.5%, $p < .001$) than the *other drugs only* group

EXHIBIT II-2
CLIENT REASONS FOR SEEKING TREATMENT AND SOURCE OF CLIENT REFERRAL

CLIENT CHARACTERISTIC	Alcohol Only n=464		Alcohol and Other Drugs n=1,523		Other Drugs Only n=2,424	
	n	%	n	%	n	%
Reason(s) for seeking treatment						
Parenting Issues [a]	8	2%	61	4%	135	6%
Avoid losing job	9	2%	17	1%	31	1%
Criminal justice pressure [a,b]	78	17%	109	7%	161	7%
Physical health reasons	30	7%	61	4%	53	2%
Personal reasons [a,b]	256	55%	1,084	71%	1,730	71%
Improve/save relationship	16	3%	40	3%	63	3%
Become eligible for services	15	3%	58	4%	76	3%
Drug availability	1	<1%	2	<1%	11	<1%
Financial	4	<1%	2	<1%	14	<1%
School teacher, minister, other	0	0%	3	<1%	1	<1%
Source of client referral						
Self [a,b]	144	31%	604	40%	931	38%
Drug treatment staff member	9	2%	17	1%	23	1%
Probation, police, courts [a,b]	149	32%	298	20%	492	20%
Medical, psychiatric [a]	9	2%	20	1%	12	<1%
School staff	2	<1%	12	<1%	13	<1%
Other public service agency	9	2%	15	1%	9	<1%
Employer [a]	9	2%	12	<1%	12	<1%
Spouse, partner, family [a,b]	109	24%	457	30%	779	32%
Friend(s)	16	3%	70	5%	119	5%
Co-worker, acquaintances	0	0%	1	<1%	1	<1%
Other	8	2%	17	1%	33	1%

Note: a- significantly different from drugs *only* group ($p < .01$)
b- significantly different from *alcohol plus drugs* group ($p < .01$)

- Had more employer referrals to treatment (2% versus 0.5%, $p < .001$) than the *other drugs* only group

- Had fewer family or spousal referrals to treatment (24% versus 32%, $p < .001$) than the *other drugs* only group.

These findings suggest that different events (e.g., employer, medical, criminal justice) precipitated the entry of *alcohol* only clients into treatment. One issue for further study is to determine whether external motivating factors, such as court-mandated treatment, have any impact on clients' chances for long-term recovery. The research evidence on this issue is mixed. Assessments of persons convicted of driving under the influence (DUI) charges have indicated high prevalences of alcohol dependence disorders (typically 40-70%), leading many states and jurisdictions to increase mandatory treatment interventions to reduce recidivism among these offenders. DeYoung (1997) found that a combination of formal alcohol treatment and driver's licence restrictions was most effective in reducing DUI recidivism rates.

3. PRIOR TREATMENT HISTORIES

Clients' treatment histories prior to their NTIES treatment experience are summarized in Exhibit 11-3. A significant proportion of clients within each study group (i.e., over 50%) had received prior treatments for alcohol or drug problems before entering NTIES treatment programs. The highest incidence of prior substance abuse treatment(s) was observed for the *alcohol and other drugs* study group, with two-thirds of these clients having received prior alcohol or drug treatment. Clients in the *other drugs* only group were more likely to have received prior substance abuse treatment(s) than were clients in the *alcohol* only group (59% versus 54%, $p < .05$). The *alcohol only* group did not differ significantly from the *other drugs* only study group in terms of prior inpatient mental health treatments but did have more frequent outpatient treatments (19% versus 16%, $p < .05$).

In the next section, we discuss findings on study group differences in the utilization of different treatment modalities (or SDU type), payment sources for treatment, and details of the discharge status for the index NTIES episode.

EXHIBIT II-3
TREATMENT HISTORIES OF CLIENTS PRIOR TO NTIES EPISODE

HISTORY	Alcohol Only n=464		Alcohol and Other Drugs n=1,523		Other Drugs Only n=2,424	
	n	%	n	%	n	%
Prior Substance Abuse Treatment						
Drug Treatment	61	13%	756	50%	1,368	56%
Alcohol Treatment	242	52%	830	55%	515	21%
Either Drug or Alcohol Tx	250	54%	1,002	66%	1,434	59%
Longest prior TX-duration*						
<1 month	81	3 2%	401	40%	521	36%
1-6 months	118	47%	430	43%	528	37%
> 6 month	51	20%	171	17%	385	27%
Longest prior Tx—setting*						
Methadone	1	<1%	15	1%	184	13%
Other outpatient	91	36%	265	26%	316	22%
Inpatient/residential	158	63%	722	72%	934	65%
In 12-step programs						
Alcoholics Anonymous	321	69%	1,167	77%	1,295	53%
Narcotics Anonymous	125	27%	956	63%	1,543	64%
Cocaine Anonymous	10	11%	537	35%	569	23%
Mental health treatment	116	25%	472	31%	542	22%
In-patient	63	14%	303	20%	322	13%
Out-patient	90	19%	327	21%	381	16%

Percentages are based on those who entered treatment and not on the whole subset.

III. Treatment Experiences

III. TREATMENT EXPERIENCES

In this section, we present findings about study group differences in the utilization of different treatment modalities (or SDU type), payment sources for treatment, and details about clients' treatment exit from the current NTIES episode.

1. TREATMENT MODALITIES

Our analyses revealed that the treatment modalities that clients entered varied according to study group ($p < .001$). As illustrated in Exhibit III-1, the percentages of clients within each study group differed in terms of the modalities or types of treatment (SDUs) they entered. Specifically:

- *Alcohol only* clients were treated primarily in outpatient settings (61%). Seldom were these *alcohol* only clients treated in long-term residential settings (8%).
- Over one-third of the clients having dual problems with *alcohol and other drugs* entered outpatient treatment (38%), while almost one-half of this group entered either long-term (24%) or short-term (2 1%) residential treatment.
- Clients seeking help for *other drugs* only showed the most even distribution across treatment modalities, including 17 percent who were treated in outpatient methadone settings.

EXHIBIT III-1
DISTRIBUTION OF NTIES CLIENTS BY TREATMENT MODALITY

	Alcohol Only n=464		Alcohol and Other Drugs n=1,523		Other Drugs Only n=2,424	
MODALITY	n	%	n	%	n	%
Methadone	1	> 1%	19	1%	402	17%
Outpatient	283	61%	577	38%	706	29%
ST residential	66	14%	317	21%	490	20%
LT residential	38	8%	368	24%	435	18%
Correctional	76	16%	242	16%	391	16%
TOTAL	464	100%	1,523	100%	2,424	100%

Key: ST=short term (planned length of stay was < 2 months); LT=long term (planned length of stay was 2 months or longer).

2. PAYMENT SOURCES FOR TREATMENT

This section describes clients' primary source(s) of payment for treatment across and within the three study groups. Among all clients, 50 percent (n=1,857) stated that they had some form of third-party insurance coverage (e.g., private insurance, Medicaid, CHAMPUS, or other).[3] The overall rates of third-party coverage (i.e., ~ 50%) did not differ across the study groups, but there were differences in the rates for specific payment sources, as outlined below.

Clients were asked during the intake interview, "Who will pay for your treatment?' In Exhibit 111-2, we present the percentages of clients within each study group who cited each of these possible payment sources.

EXHIBIT III-2
DISTRIBUTION OF NTIES CLIENTS BY TREATMENT PAYMENT SOURCE

PAYMENT SOURCE(S) FOR TREATMENT*	Alcohol Only n=385		Alcohol and Other Drugs n=1,271		Other Drugs Only n=2,010	
	n	%	n	%	n	%
Private insurance or health plan	33	9%	98	8%	91	4%
Self-pay	102	26%	158	12%	373	19%
Family members	6	2%	33	3%	75	4%
Government source	219	57%	886	70%	1,339	67%
Other source	29	8%	106	8%	157	8%

*Notes: Data were missing for 745 clients. Clients could cite multiple payment sources, therefore columns may not sum to 100 percent.

In several respects, the study groups differed in the sources used to finance the NTIES treatment episode. Compared to the *other drugs only* study group, a significantly higher proportion of clients in the *alcohol only* group had either private health insurance coverage or were intending to pay for treatment themselves (35% versus 23%, $p < .001$). Conversely, a smaller proportion of the *alcohol only* clients were using government sources to finance treatment compared to the *other drugs only* group (57% versus 67%, $p < .001$). No differences

[3] Data were not applicable to the correctional population, therefore data were missing for all 709 clients in these programs.

were observed between study groups in the percentages of clients having family members or "other sources" finance their substance abuse treatment episode.

As shown in Exhibit 111-3, the three groups did not differ in their stated treatment goals. There were no differences between the *other drugs only* and the *alcohol only* groups for the treatment goals of "stop committing crimes" or "reduce legal problems." However, both of these items had a low baseline percentage of positive responses (i.e., less than 2% of sampled clients), raising the possibility that "floor effects" or under-reporting by clients may have masked any real differences between the three groups. Virtually no differences were observed in clients' reports of their personal attempts to adhere to treatment goals, or their assessment of the overall helpfulness of the treatment program.

3. REASONS FOR TREATMENT DISCHARGE

The principal reasons for client discharge from treatment are summarized in Exhibit 111-4. In contrast to the absence of group differences in clients' (self-reported) attempts to comply with the treatment plan, a greater proportion of those in treatment for alcohol only actually completed treatment as compared to the *other drugs only* group (44% versus 31%, $p < .001$). In addition, a smaller proportion of *alcohol only* clients were terminated by their own choice (19% versus 27%, $p < .001$). Taken together, these findings suggest that clients with alcohol problems only may have demonstrated greater treatment compliance than the *other drugs only* clients. The higher frequency of legal inducements to treatment for the *alcohol only* group (see Exhibit 11-2) may account for some of the higher treatment completion rates observed.

EXHIBIT III-3
TREATMENT DATA FROM CLIENT DISCHARGE QUESTIONNAIRE

CHARACTERISTIC	Alcohol Only n=395		Alcohol and Other Drugs n=1,247		Other Drugs Only n=2,039	
	n	%	n	%	n	%
Sent-reported treatment plan goals:						
Get off illegal drugs	72	18%	617	49%	1,142	56%
Get off treatment drugs (e.g., methadone)	1	< 1%	8	1%	41	2%
Quit drinking	206	52%	404	32%	183	9%
Improve physical health	20	5%	58	5%	60	3%
Improve mental health	35	8%	161	13%	225	11%
Job-related	79	20%	225	18%	387	19%
Reduce financial problems	4	1%	24	2%	39	2%
Get housing	11	3%	77	6%	100	5%
School-related	35	9%	142	11%	246	12%
Stop committing crimes	4	1%	20	2%	40	2%
Reduce legal problems	3	1%	26	2%	18	1%
Improve family relations	44	11%	127	10%	284	14%
Other	97	25%	325	26%	445	22%
Client rating: "[I] tried to stick to treatment goals..."						
Very much	240	82%	772	79%	1,609	79%
Somewhat	48	16%	190	20%	387	19%
Not at all	6	2%	11	1%	36	2%
Client rating of treatment helpfulness						
Very much	264	67%	792	63%	1,238	61%
Somewhat	103	26%	375	30%	660	31%
Not at all	28	7%	80	6%	132	7%

EXHIBIT III-4
REASON FOR TREATMENT DISCHARGE

REASON FOR DISCHARGE FROM TREATMENT	Alcohol Only n=464		Alcohol and Other Drugs n=1,523		Other Drugs Only n=2,424	
	n	%	n	%	n	%
Treatment completed	202	43.5%	605	39.7%	752	31.0%
Referred to another program	19	4.1%	36	2%	84	3.5%
Terminated—SDU choice	49	10.6%	121	8%	283	11.7%
Terminated-patient choice	90	19.4%	433	28%	661	27.3%
Terminated-reason unknown	27	5.8%	86	6%	83	3%
Incarcerated	8	1.7%	28	3%	53	5%
Missing/Other/Unknown	69	14.8%	214	14%	508	21%

IV. TREATMENT OUTCOMES

IV. TREATMENT OUTCOMES

This section describes similarities and differences between those in treatment for alcohol problems only and other NTIES clients on indicators of treatment outcomes. Key indicators are reductions in substance use and social, legal, and other problems associated with substance use. Findings are discussed separately for (1) drug and alcohol use outcomes, (2) criminal behavior outcomes, and (3) employment and health outcomes.

1. DRUG AND ALCOHOL USE OUTCOMES

Findings concerning treatment outcomes for drug and alcohol abuse are summarized in Exhibit 111-4. The table includes overall percentages of clients within each group that reported using particular substances (drugs) five or more times during the 12-month periods before and after treatment. In addition, the table shows pre- and post-treatment levels of alcohol use for 30-day periods.

By definition, the *alcohol* only study group had a negative history of **other** drug use for the 12 months prior to the NTIES treatment episode. The data presented in Exhibit IV-l suggest the following conclusions:

- The *other drugs only* and *alcohol plus other drugs* groups demonstrated significant reductions in post-treatment drug use (all p's $< .OO$ 1).
- Small percentages of clients within the *alcohol only* group "initiated" drug use in the post-treatment period, particularly marijuana (10%), cocaine (3%), and crack (3%), p's $< .001$.
- Across groups, after controlling for gender and race, no post-treatment declines were observed for the measure "any alcohol use in the past 30 days" ($p = .71$). However, any 30-day alcohol use appeared to be significantly lower in the post-treatment period for the *alcohol and other drugs* group.
- Across groups, getting drunk in the past 30 days significantly declined from the pre- to the post-treatment periods.

EXHIBIT IV-1
PRE- TO POST-TREATMENT SUBSTANCE USE OUTCOMES

SUBSTANCE	Alcohol Only n=464			Alcohol and Other Drugs n=1,524			Other Drugs Only n=2,424		
	Pre-treatment (%)	Post-treatment (%)	χ^2 p-value	Pre-treatment (%)	Post-treatment (%)	χ^2 p-value	Pre-treatment (%)	Post-treatment (%)	χ^2 p-value
Substance(s) used:									
Cocaine	0	3	.001	43	16	.001	45	19	.001
Crack	0	3	.001	61	26	.001	54	24	.001
Heroin	0	1	.014	10	4	.001	37	21	.001
Marijuana	0	10	.001	70	32	.001	57	26	.001
Stimulants	0	1	.083	8	3	.001	10	4	.001
Depressants	0	1	.025	10	3	.001	12	5	.001
Alcohol use:									
Any use in past 30 days?	52	49	.323	60	51	.001	41	38	.015
Got drunk once or more in past 30 days?	33	24	.001	44	29	.001	15	13	.034

2. CRIMINAL BEHAVIOR OUTCOMES

Two items from the pre- and post-treatment client interviews examined criminal behaviors: self-reports of types of crimes committed during the pre- and post-treatment reference periods, and self-reports of arrests for various crimes. Exhibit IV-2 depicts changes in the frequency of self-reported criminal behaviors and arrests for the three groups.

On average, *alcohol* only clients had fewer self-reported crimes and arrests prior to treatment. They were less likely to have committed physical assaults (15% versus 30%, $p < .001$), prostitution for drugs or money (2% versus 23%, $p < .001$), or shoplifting offenses (8% versus 34%, $p < .001$) compared to the *other drugs only* study group.

Nevertheless, all groups demonstrated substantial reductions in crimes during the post-treatment reference period. Total crimes committed by clients declined significantly for all study groups. Clients in the *alcohol only* treatment showed substantial post-treatment declines in some crimes such as assaults and shoplifting (where there was a higher baseline of illegal activity for those clients: $p's < .001$).

Any declines in self-reported arrests were difficult to determine for the *alcohol only* group due to the low baseline frequency of many of these behaviors. However, arrests of *alcohol* only clients for DUI/DWI offenses were significantly reduced-from 24 percent of clients reporting arrests in the pre-treatment period to only 4 percent reporting DUI arrests in the post-treatment period. DUI/DWI arrests were also significantly reduced for the *alcohol and other drugs* and the other *drugs only* groups.

3. EMPLOYMENT AND HEALTH OUTCOMES

Exhibit IV-3 shows pre- to post-treatment changes in the clients' levels of employment and general health status (physical and mental).

- All groups showed significant pre- to post-treatment increases in rates of employment
- All groups showed significant pre- to post-treatment reductions in unemployment due to being in jails or prisons
- *Alcohol only* and *alcohol plus other drugs* groups improved on their self-ratings of physical health status (i.e., percentages reporting poor or fair health *declined* following treatment)

EXHIBIT IV-2
PRE- TO POST-TREATMENT CRIMINAL BEHAVIOR OUTCOMES

CRIMINAL BEHAVIOR	Alcohol Only n=464			Alcohol and Other Drugs n=1,523			Other Drugs Only n=2,424		
	Pre-treatment (%)	Post-treatment (%)	χ^2 p-value	Pre-treatment (%)	Post-treatment (%)	χ^2 p-value	Pre-treatment (%)	Post-treatment (%)	χ^2 p-value
Total Crimes	24	11	.001	68	27	.001	69	30	.001
Armed Robbery	1	1	.527	7	3	.001	6	2	.001
Breaking and Entering	2	1	.527	12	4	.001	12	4	.001
Physical Assaults	15	8	.001	37	14	.001	30	11	.001
Prostitution	2	2	.763	23	6	.001	23	6	.001
Vehicle Theft	2	1	.058	6	2	.001	7	2	.001
Shoplifting	8	3	.001	30	10	.001	34	13	.001
Selling Drugs	3	3	.819	34	12	.001	40	16	.001
Arrests									
Armed Robbery	<1	0	.046	2	1	.009	2	1	.001
Breaking and Entering	2	<1	.014	12	2	.001	12	2	.001
Vehicle Theft	<1	<1	.655	4	1	.001	3	1	.001
Shoplifting	2	1	.035	5	2	.001	8	3	.001
Selling Drugs	1	1	.999	4	1	.001	8	3	.001
DUI/DWI	24	4	.001	13	3	.001	3	1	.001

EXHIBIT IV-3
PRE- TO POST-TREATMENT OUTCOMES: EMPLOYMENT AND HEALTH

	Alcohol Only n=464			Alcohol and Other Drugs n=1,523			Other Drugs Only n=2,424		
	Pre-treatment	Post-treatment	χ^2 p-value	Pre-treatment	Post-treatment	χ^2 p-value	Pre-treatment	Post-treatment	χ^2 p-value
Employment									
Currently employed	29	54	.001	16	42	.001	15	39	.001
Not working-disability	7	11	.015	6	10	.001	6	9	.001
Not working-drug use	5	3	,209	19	8	.001	21	9	.001
Not working-prison/jail	16	5	.001	16	8	.001	16	11	.001
Physical Health									
General health (% poor or fair)	33	27	.014	31	27	.010	28	28	.753
Limitations on performing work	36	35	.584	33	31	.046	31	29	.072
Mental Health									
Anxiety	26	14	.oo	35	20	.001	26	13	.001
Depression	49	33	.001	60	37	.001	52	35	.001
Suicide attempts	5	3	.131	10	4	.001	7	4	.001

- Across groups, no declines were observed on self-reported ratings of health-related work limitations

- Across groups, significant reductions in self-reported symptoms of anxiety and depression were observed.[4]

In summary, across the three study groups examined, there were a number of significant improvements in client outcomes across the domains of drug and alcohol use, criminal behavior, health and employment. Implications for the finding of no declines in past 30-day use of alcohol are discussed in the concluding sections of this report.

[4] Despite the significant declines in physical and mental health problems, post-treatment client percentages revealed substantial levels of residual impairment.

V. SUMMARY AND CONCLUSIONS

V. SUMMARY AND CONCLUSIONS

This chapter summarizes the research findings and identifies implications for further analyses, policy, and treatment practice.

1. RESEARCH FINDINGS

Clients entering treatment (primarily) for alcohol use possess some unique characteristics when contrasted with clients entering treatment for drugs other than alcohol. Within the NTIES study sample, *alcohol* only users tended to be older, more often white, somewhat more educated, and more likely to be employed at the start of the NTIES treatment episode. These clients also gave poorer self-ratings of physical health status (although this could be an artifact of the age differences noted above) and were about twice as likely to cite health as a reason for entering treatment. In addition, despite the legal status of alcohol as a substance, the *alcohol* only clients were more likely to have entered treatment because of legal pressures (e.g., DUI/DWI).

Clients within the *alcohol* only study group were just as likely to have received prior treatments for addictive disorders as the *other drugs only* group clients. However, the *alcohol* only clients were much more likely to be placed in outpatient substance abuse treatment settings compared to the latter group. Several factors may influence the frequency with which less severely impaired clients are placed in outpatient settings. First, clinical and empirical evidence have suggested that the relative benefits of residential (inpatient) as opposed to outpatient treatment, specifically for alcohol abusers, may be quite limited (e.g., Annis, 1986; Miller & Hester, 1986; IOM, 1990). Second, the increased use of cost-containment strategies by third-party payers may limit the frequency with which alcohol only clients are placed in residential treatment settings.

In contrast to the basic similarities in treatment experiences (e.g., reported intensity of services) among the three client groups, there were some significant differences observed among the reasons for client-discharge from treatment. *Other drugs* only users were more likely to self-terminate treatment compared to *alcohol* only users. Treatment completion rates were also lower among clients in the *other drugs* only group (3 1%) compared to *alcohol only (44%)* or *alcohol and other drug* clients (40%).

A number of factors might underlie these apparent differences in treatment completion rates between the study groups. *Alcohol* only clients tended to less often self-refer into treatment and had a significantly higher incidence of court-mandated treatments. These clients, who may have had stronger negative consequences associated with treatment non-completion (e.g.,

revoked probation), showed evidence of increased compliance with therapeutic goals while in treatment.

Regardless of study group, pre- to post-treatment comparisons of client behaviors revealed strong, positive outcomes associated with substance abuse treatment. Clients in the *alcohol only* group showed substantial reductions in assaults and shoplifting crimes. In short, all groups showed substantial improvements in drug use, criminal, employment, and health outcomes.

2. IMPLICATIONS FOR FURTHER ANALYSES, POLICY AND TREATMENT PRACTICE

This section describes possible directions for exploring additional research questions as well as several policy and treatment practice implications of the current study. Our identification of client and treatment characteristics that are unique to clients with primary alcohol problems suggests the need for further examination of these issues.

Analyses

Clients in the *alcohol only* study group represented a small proportion-slightly more than 10 percent-of the total NTIES client cohort (N=4,411). Although the findings described above suggest some noteworthy differences in demographic characteristics, treatment experiences, and outcomes between the study groups, there is undoubtedly some degree of clinical heterogeneity within the *alcohol only* cohort. In fact, due to the limited scope of this preliminary analysis and the extent of missing data for key variables, we were unable to control for client variation in drug/alcohol abuse severity, psychiatric severity, sociopathy, or a number of other clinical variables that could directly influence outcome measures of treatment effectiveness.

In order to conduct rigorous follow-up analyses of alcohol-using client cohorts, larger samples are required. It is important to model the effects of employment status, insurance benefits; clinical severity, functional status, and treatment matching protocols employed (if any) on short- and long-term outcomes. Large-scale databases such as project MATCH (Matching Alcoholism Treatment to Client Heterogeneity) could serve as a model. These large data sets would allow for the definition of typologies or categories of alcohol-abusing clients and the mechanisms for placing specific clients into particular treatment settings.

A number of authors maintain that typologies of alcohol abusers may continue to have some utility for understanding specific issues in the etiology and treatment of addictive disease (e.g., Babor, 1996). We recommend exploring both statistical (e.g., cluster analysis) and conceptual (e.g., familial history of addiction) means for categorizing subsets of alcohol-abusing clients in order to more fully understand the factors that influence treatment effectiveness. For such analyses, significantly larger samples of clients with problems limited to alcohol would be required, and therefore the aggregation of data across multiple evaluation data sets may need to be explored.

Finally, it will be important to operationalize the dimensions of formal and informal (e.g., Alcoholics Anonymous) post- [acute] treatment recovery support networks accessed by alcohol users in order to quantify their immediate and longer-term effects on treatment outcomes. Recognizing the chronic nature of addictive disease, the role of ongoing recovery support networks is likely to be as critical to positive outcomes as more discrete, formal treatment episodes. Access to reliable client data concerning these informal "services" has proved to be an ongoing challenge to researchers,

Policy

Individuals who use alcohol to the exclusion of other substances appear to have unique profiles in terms of demographic characteristics, their placement into different types of treatment, their motives for seeking treatment, and their rates of success in substance abuse -treatment. The identification of treatment practices that are most effective for these clients could have a substantial, positive impact on society. These "best practices" have not been definitively established, however. The prospects for success of current Federal and state programs aimed at reducing drunk driving behaviors could be better evaluated if these basic parameters of treatment effectiveness were understood. The fact that the present analysis revealed no real decrease in alcohol use among clients in treatment for alcohol should be of key concern to the parties who are funding and maintaining these programs.

The cohort of individuals who use alcohol exclusively, however, may be "aging out" to some extent (as suggested by some of the epidemiologic data cited above). Additional research is needed to answer this question definitively. Ultimately, the determination of how and where to allocate scarce treatment evaluation resources, and for which substance-abusing populations, will lie with key decision makers who will have to "trade-off" immediate and long-term costs against a variety of potential societal benefits.

Treatment Practice

Across all study groups there were no significant post-treatment reductions in the use of (any) alcohol. This may be especially problematic from a clinical perspective for the *alcohol* only study group. Among those individuals who identified alcohol as their primary reason for seeking treatment, almost half (49%) who were interviewed 1 year post-treatment reported having drunk alcohol within the last 30 days. Clients from this group who completed treatment had a somewhat lower prevalence of alcohol use at follow-up (43%) than clients who left treatment early (54%). Nevertheless, if alcohol abstinence was a therapeutic goal for these programs, then a large number of these cases could be considered as "treatment failures."

Taken as a whole, these findings suggest a somewhat complex pattern. Although clients entering treatment for alcohol abuse appeared to have greater financial, educational, and vocational resources available to them to support their recovery, they also demonstrated several risks for poorer outcomes. First, their older age may ultimately exacerbate the negative, cumulative effects of alcohol use and place them at heightened risk for chronic health complications. Second, although the NTIES treatment data suggest that these clients may be among the more compliant treatment populations examined, they frequently report some alcohol use in the months following treatment. This may suggest a need for practitioners to intensify their efforts to link clients with adequate post-treatment aftercare in order to prevent their relapse to substance use.

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APPENDIX:

DESCRIPTION OF THE NATIONAL TREATMENT IMPROVEMENT EVALUATION STUDY AND CENTER FOR SUBSTANCE ABUSE TREATMENT DEMONSTRATIONS (1990-1992)

APPENDIX:
DESCRIPTION OF THE NATIONAL TREATMENT IMPROVEMENT EVALUATION STUDY AND CENTER FOR SUBSTANCE ABUSE TREATMENT DEMONSTRATIONS **(1990-1992)**

The National Treatment Improvement Evaluation Study (NTIES) was a national evaluation of the effectiveness of substance abuse treatment services delivered in comprehensive treatment demonstration programs supported by the Center for Substance Abuse Treatment (CSAT). The NTIES project collected longitudinal data between FY 1992 and FY 1995 on a purposive sample of clients in treatment programs receiving demonstration grant funding from CSAT. Client-level data were obtained at treatment intake, at treatment exit, and 12 months after treatment exit. Service delivery unit (SDU) administrative and clinician (SDU staff) data were obtained at two time points, 1 year apart.

1. THE NTIES DESIGN

The NTIES study design had two levels-an administrative or services component and a clinical treatment outcomes component.

1.1 The Administrative/Services Component

This study component was designed to assess how CSAT demonstration funds were used, what improvements in services were implemented at the program level, and what kind and how many programs and clients were affected by the demonstration awards. Four data collection instruments were used to gather administrative/services data: the NTIES Baseline Administration Report (NBAR), the NTIES Continuing Administrative Report (NCAR), the NTIES Exit Log, and the NTIES Clinician Form (NCF).

The unit of analysis for the administrative component was the SDU, defined by CSAT as a single site offering a single level of care. The classification of level of *care* is based on three parameters: (1) facility type (e.g., hospital, etc.); (2) intensity of care (e.g., 24-hour, etc.); and (3) type of service (e.g., outpatient, etc.). An SDU could be a stand-alone treatment provider or it could be one component of a multi-tiered treatment organization. For example, a large county mental health agency may be *the organization* within which the SDU is located. The organization may have multiple substance abuse treatment components, such as a county hospital and a county (ambulatory) mental health center. The county hospital may have multiple SDUs, such as an inpatient detoxification

service, an outpatient counseling service, and a hospital satellite center providing transitional care. In summary, the SDU provided NTIES evaluators with a stable, uniform level of comparison for examining service delivery issues.
his is one of four instruments developed for administrative data collection

A range of key clinician-specific data elements (within the administrative component) were assessed using the NTIES Clinician Form (NCF). The NCF items were an important adjunct to the facility- (SDU) level instruments; these items assessed clinician training, experience, client exposure, and service provision, and were completed by all counseling and clinical (medical and therapeutic) staff at the individual SDUs.

1.2 Clinical Treatment Outcomes Component

The unit of analysis for the clinical treatment outcomes component was individual client data. NTIES measured the clinical outcomes of treatment primarily through a "before/after" or "pre- to post-treatment" design. This method compares behaviors or other individual characteristics in the same participants, measured in similar ways, before and after an intervention.

Information about clients' lives for the *before* period were obtained from the NTIES Research Intake Questionnaire (NRIQ), which was administered sometime during the clients' first 3 weeks of treatment. The specific areas assessed included:

- Drug and alcohol use
- Employment
- Criminal justice involvement and criminal behaviors
- Living arrangements
- Mental and physical health.

Information about clients' lives for the *after* period were obtained from the NTIES Post-discharge Assessment Questionnaire (NPAQ), with the same areas assessed at roughly 12 months post-treatment. Other client data sources included a treatment discharge interview (NTIES Treatment Experience Questionnaire, NTEQ), abstracted client records, urine drug

screens collected at the time of the follow-up interview, and arrest reports from state databases.

1.3 The Outcome Analysis Sample

Between August 1993 and October 1994, research staff successfully enrolled 6,593 clients at 71 SDUs to participate in three waves of an in-person, computer-assisted data collection protocol. These SDUs were chosen from the universe of treatment units receiving demonstration grant funding from CSAT. Some of the selected facilities were wholly supported by CSAT awards, while others received only indirect support or none.

Clients were interviewed at admission to treatment, when they left treatment, and then at 12 months after the end of treatment. Less than 10 percent of the recruited clients refused or avoided participation, and more than 83 percent of the recruited individuals (5,388 clients) completed a follow-up interview. Additional sample exclusions included:

- Missing or undetermined treatment exit date
- Inappropriate length of follow-up interval (less than 5 or more than 16 months)
- Clients incarcerated for most or all of the follow-up period.

The additional sample exclusions resulted in a final outcome analysis sample of 4,411 individuals.

2. TREATMENT DEMONSTRATION PROGRAMS

CSAT initiated three major demonstration programs and made 157 multi-year treatment enhancement awards across 47 states and several territories during 1990 through 1992. One objective common to all demonstrations was CSAT's emphasis on the provision of "comprehensive treatment" services to targeted client populations. The recipients of these awards focused special attention on the substance abuse treatment service needs of minority and special populations located primarily within large metropolitan areas. The demonstration programs are briefly described below.

2.1 Target Cities

Under this demonstration, nine metropolitan areas were selected to receive awards, of which half were included in the NTIES purposive sample. The following treatment improvement activities were explicitly provided for in the awards:

- Establishment of a Central Intake Unit (CIU) with automated client tracking and referral systems in place
- Provision of comprehensive services, including vocational, educational, biological, psychological, informational, and lifestyle components
- Improved inter-agency coordination (e.g., mental health, criminal justice, and human service agencies)
- Services for special populations-adolescents, pregnant and postpartum women, racial and ethnic minorities, and public housing residents.

2.2 Critical Populations

Under this demonstration program, awardees were required to implement "model enhancements" to existing treatment services for one or more of the following critical populations: racial and ethnic minorities, residents of public housing, and/or adolescents. Special emphasis was given to services provided to the homeless, the dually diagnosed, or persons living in rural areas. A total of 130 grants were awarded, covering services such as vocational support/counseling, housing assistance, integrated mental health and/or medical services, coordinated social services, culturally directed services, and others.

2.3 Incarcerated and Non-Incarcerated Criminal Justice Populations

Under this demonstration program, funds were directed toward improving the standard of comprehensive treatment services for criminally involved clients in correctional and other settings. Some program emphasis was placed on ethnic and/or racial minorities. Nine Correctional Setting demonstrations were funded: five in prisons, three in local jails, and one across a network of juvenile detention facilities. All projects included a screening component to identify substance-abusing inmates, a variety of targeted treatment interventions (e.g., therapeutic communities, intensive day treatment programs), and a substantial aftercare component.

A total of 10 non-incarcerated projects were funded. Five programs targeted interventions at clients in diversionary programs, three focused services on probationers or parolees, and two programs targeted both populations. Almost all of the funded demonstration projects included the following components:

- Basic eligibility determination, followed by systematic screening and assessment
- Referral to treatment
- Graduated sanctions and incentives while in treatment
- Intensive supervision in treatment
- Community-based aftercare with supervision and service coordination.

In total, 19 criminal justice projects were funded as part of the CSAT 1990- 1992 demonstrations, and as indicated in the next section, these projects were purposively over-sampled in order to obtain a more robust evaluation of this program.

3. DESCRIPTION OF SDUs AND CLIENTS BY TREATMENT MODALITY AND PROGRAM TYPE

The 71 SDUs contributing clients to the outcome analysis sample are characterized by modality and (demonstration) program type in Exhibit A-l below. Among the 698 SDUs in the NTIES universe: 52 percent (n=365) were Target Cities programs, 39 percent (n=274) were Critical Populations programs, and 9 percent (n=59) were Criminal Justice programs.

In terms of the SDUs sampled for the NTIES outcome analysis, 44 percent were Target Cities programs, 38 percent were Critical Populations programs, and 23 percent were Criminal Justice programs. Criminal Justice SDUs were purposely over-sampled as part of the NTIES evaluation design (CSAT, 1997). Nearly half of the sampled SDUs were (non-methadone) outpatient programs, and about one-quarter were long-term residential programs.

EXHIBIT A-1
SDUs IN THE OUTCOME ANALYSIS SAMPLE

Program Title Number of SDUs (% of NTIES Universe)[5]	NTIES Sample	Methadone	Outpatient	Long-Term Residential	Short-Term Residential	Correctional
Target Cities n=365 (52%)	31 (44%)	6	15	6	4	0
Critical Populations n=274 (39%)	27 (38%)	1	13	10	3	0
Criminal Justice n=59 (9%)	13 (23%)	0	5	0	0	8
Totals N=698 (100%)	71 (100%)	7	33	16	7	8

As shown in Exhibit A-2, 59 percent of all NTIES clients were sampled from Target Cities SDUs. Slightly over 2 1 percent of all NTIES clients were sampled from Critical Populations SDUs and 20 percent were sampled from Criminal Justice SDUs. Outpatient (non-methadone) SDUs treated over one-third (35%) of the clients in the outcomes analysis sample, and almost 80 percent of these were sampled from Target Cities programs.

The original NTIES universe of SDUs included a program type called *Specialized Services.* Because clients for the outcome analysis sample were not drawn from these SDUs (n=94), they are excluded from the Exhibit.

EXHIBIT A-2
DISTRIBUTION OF CLIENTS IN THE OUTCOMES ANALYSIS SAMPLE

Program Title Number of Clients (% of Analysis Sample)	Methadone	Outpatient	Long-Term Residential	Short-Term Residential	Correctional
Target Cities n=2,600 (59%)	377 (89%)	1,214 (78%)	504 (60%)	505 (58%)	0
Critical Populations n=931 (21%)	45 (11%)	220 (14%)	298 (35%)	368 (42%)	0
Criminal Justice n=880 (20%)	0	132 (8%)	39 (5%)	0	709 (100%)
Totals n=4,411 (100%)	422	1,566	841	873	709

Readers who are interested in more detailed information about the NTIES project are invited to visit the NEDS Web site at: **http://neds.calib.com**. The NEDS Web site provides the full-length version of the NTIES Final Report (1997), as well as copies of all data collection instruments employed in NTIES.